



Laurel Bed Lake 2007



Laurel Bed Lake is a 330-acre impoundment located in the Clinch Mountain Wildlife Management area in Russell County. It is the largest Department-owned lake west of the Blue Ridge. The lake has a maximum depth of about 40 feet and an average depth of 15 feet. The mountain top setting (3600 feet elevation) and the unique mixed hardwood forest surrounding the lake provide a setting with unparalleled beauty.

During the 1970's and 1980's Laurel Bed provided a productive and popular brook trout fishery. During the early 1990's, however, low pH (acidic) water and other factors severely limited brook trout survival and growth. The lake suffered from low pH because there is very little limestone in the watershed to buffer acid precipitation. Most fish need water with a pH from 6.0 to 9.0 in order to survive and prosper. The pH of rain and snow in the lake's vicinity is about 5.0. Without anything to buffer the low pH precipitation, the lake's water also had a pH of about 5.0. Another factor that complicated fisheries management at Laurel Bed Lake was the unauthorized stocking of rock bass in the early 1980's. Rock bass can survive and reproduce in low pH water, so they soon became overabundant (relative abundance = 266) and stunted at a small size (four to five inches). Stocked brook trout no longer grew well, because insects were scarce due to the low pH water and because rock bass competed with brook trout for the limited food.

In 1996 the lake was drained to allow structural repairs. This offered biologists an opportunity to reclaim the brook trout fishery. Rock bass were removed from the lake during the draining process, and when the lake re-filled in 1997 limestone dust was added to improve the lake's pH. Fingerling brook trout were stocked. Although considerable effort was expended to remove rock bass, they were collected in the 1998 sample. Because biologists were concerned that the rock bass would again overpopulate the lake, smallmouth bass were stocked with the hope that they might feed on the rockbass and keep the population at a manageable level.

Laurel Bed Lake is currently managed for brook trout, rainbow trout, smallmouth bass and rock bass. Routine fisheries management activities include fish population sampling, water quality sampling, fish stocking and water quality improvement (liming). The lake's fish populations are sampled each year. Biologists use an electrofishing boat to collect smallmouth and rockbass in the spring and use gillnets to collect brook trout in the fall. Water samples are collected periodically to insure that the lake's pH remains above 6.0. Fingerling brook and rainbow trout (six to eight inches) are stocked each fall. Smallmouth bass are stocked as needed to maintain the population.

The lake was limed in 1997, 1998, 1999, 2001, 2003 and 2005 to keep pH levels in the desirable range. Water samples are collected from the lake and sent to James Madison University for chemical analysis. Since the first direct lake liming in 1997, the pH of water in Laurel Bed Lake has remained above 6.0. Periodic liming will be necessary to keep the pH at a level that will support fish and aquatic insect life.

Brook Trout

Stocked brook trout survived and grew well in Laurel Bed Lake from 1998 through 2000. Since 2001 brook trout holdover has been virtually non-existent, even though the stocking rate was increased. It is unlikely that the changes in the brook trout population are related to water quality, because pH and other water quality parameters have remained stable. The poor holdover is probably a combination of limited summer habitat (low dissolved oxygen and warm water temperature), competition with rock bass and smallmouth and predation by smallmouth. Angler harvest may also be a factor, because brook trout are generally easier to catch than rainbow trout. The majority of the brook trout caught by anglers are from the most recent stocking (stocked in the fall of the previous year). Stocked brook trout do provide fishing opportunities from April through early June. Biologists intend to continue the longstanding tradition of brook trout fishing at Laurel Bed Lake. The 2006 angler survey provided some important data that may be used to improve brook trout fishing opportunities in the future.

Rainbow trout

In recent years, stocked rainbow trout provided trout fishing opportunities throughout the fishing season. Rainbows survive through the summer months in Laurel Bed Lake much better than brook trout. Rainbows that survive in the lake grow to 16 to 18 inches within a couple of years. Some anglers reported catching trophy rainbows in 2005 and 2006. Because they survive longer and provide extended fishing opportunities, rainbows are now stocked at a higher rate than brook trout.

Smallmouth bass

Smallmouth have prospered in Laurel Bed Lake since the first stocking in 1998. Relative abundance (number of fish collected per hour of sampling) varies from year to year, but has generally increased since 1999 (Figure 1). The increased overall abundance in the 2003 and 2006 samples is the result of catching more young fish from good spawns in 2002 and 2005. A night sample was collected in 2006 to compare daytime and nighttime fish distributions. The night sample yielded more bass per hour than day sampling. This is not unusual for smallmouth bass in lakes with clear water. The increase in catch rate at night is most likely the result of more bass occupying shallow water near the shoreline. The same might be true at dusk and dawn, and on overcast or windy days, because these conditions limit sunlight penetration into the water.

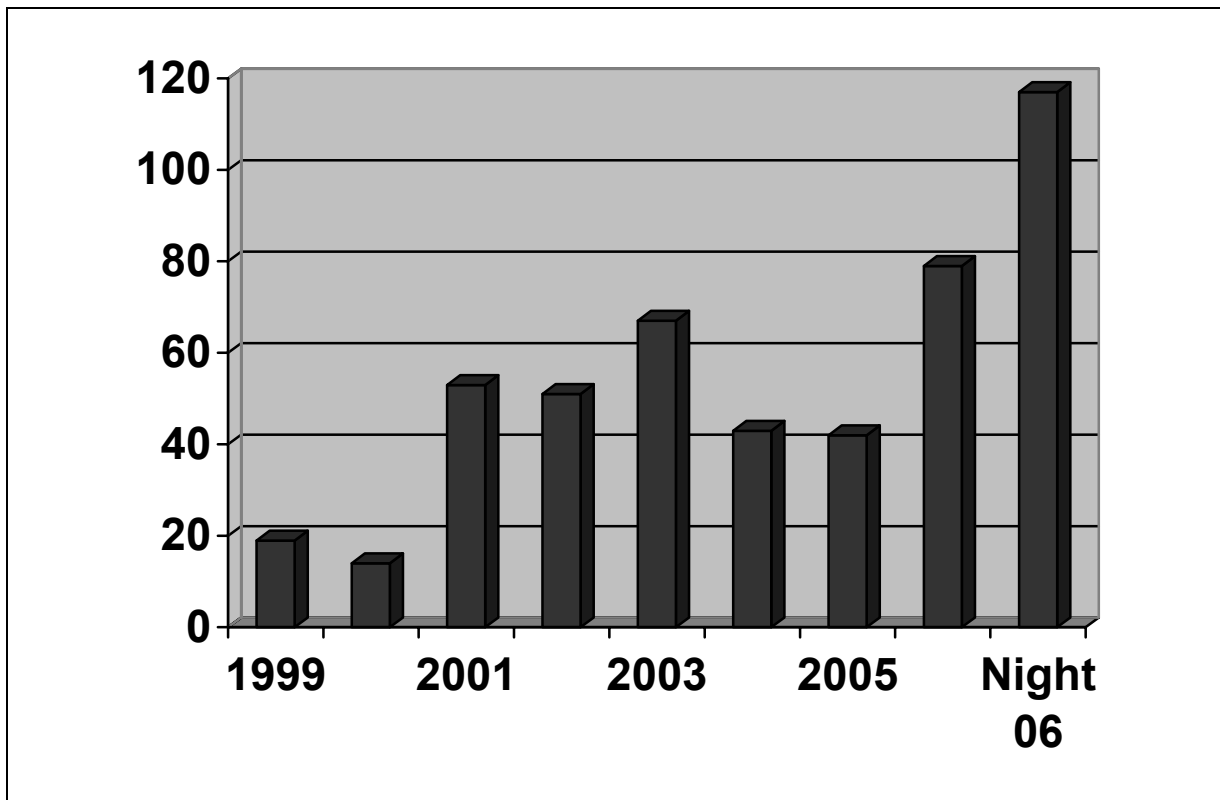


Figure 1. Number of smallmouth bass collected per hour of sampling in Laurel Bed Lake 1999-2006. Data from the May 2006 night sample are included for comparison.

The size structure of the smallmouth bass population improved in recent years. The electrofishing catch rates of preferred size (> 14 -inch) smallmouth bass varied somewhat, but the overall trend is increasing (Figure 2). Catch rates for smallmouth bass over 17 inches also increased. More big fish were collected at night in 2006.

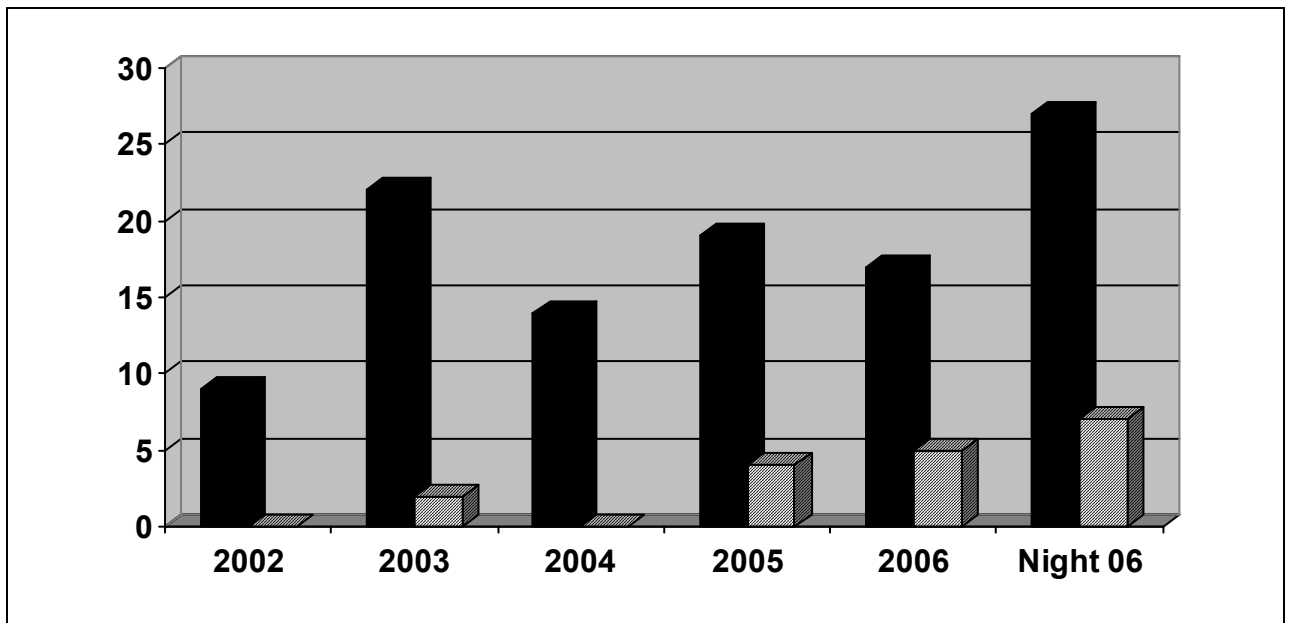


Figure 2. Number of preferred size (dark columns) and memorable size (striped columns) smallmouth collected per hour of electrofishing in Laurel Bed Lake 2002-2006. Preferred size for smallmouth bass is 14 inches and memorable size is 17 inches.

Rock bass

The rock bass population in Laurel Bed Lake exploded from 1998 through 2002 (Figure 3). The relative abundance of rock bass dropped to 95 fish per hour of sampling in 2003, and remained at or below 100 fish per hour through 2005. The 2006 sample yielded slightly higher catch rates for rock bass. Time will tell whether this is a trend, or just routine variation.

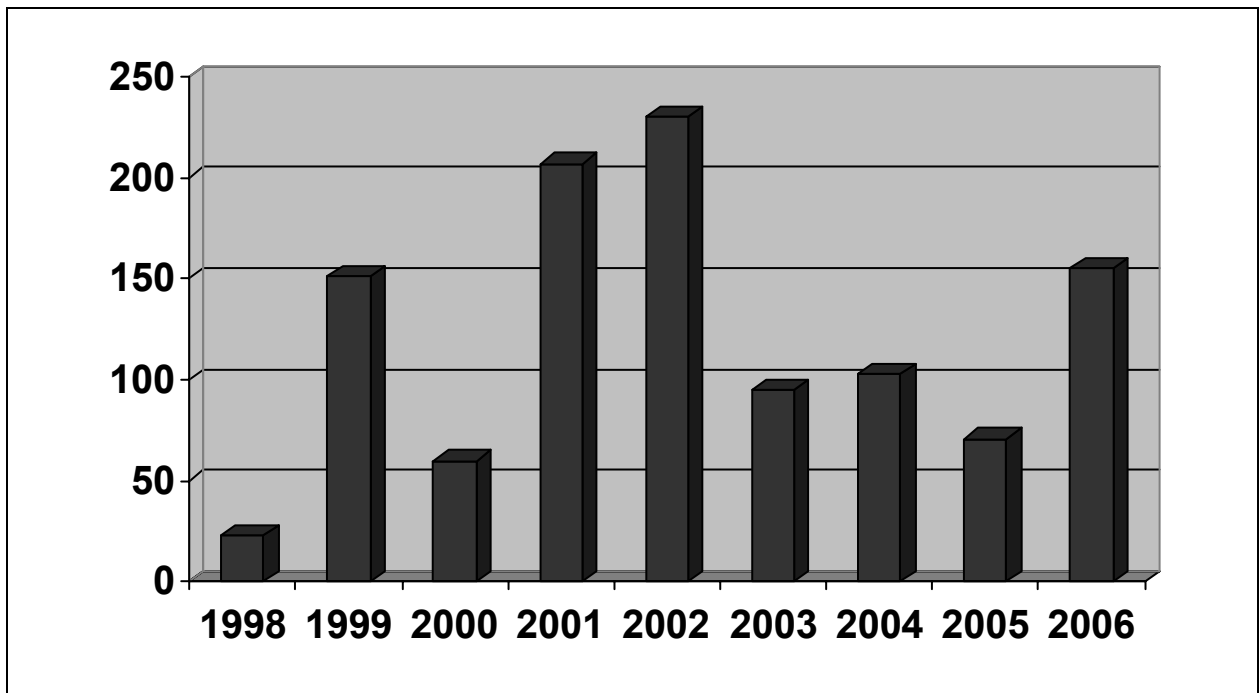


Figure 3. Number of rock bass collected per hour of electrofishing in Laurel Bed Lake from 1998 – 2006.

The average size of rock bass (about six inches) hasn't changed much since 2000. However, the number of preferred size (nine inches) rock bass collected per hour of sampling has increased steadily since 2004 (Figure 4). Like the smallmouth sample, more big rock bass were collected at night than in daytime sampling. Approximately three times as many rock bass over nine inches were collected at night in 2006.

Overall it appears that the smallmouth population offers some measure of control on rock bass abundance. A moderately abundant population of good-sized rock bass is an acceptable addition to the Laurel Bed fishery. An overabundant population of stunted rock bass would provide only marginal fishing, and would be a major source of competition for brook trout and young smallmouths.

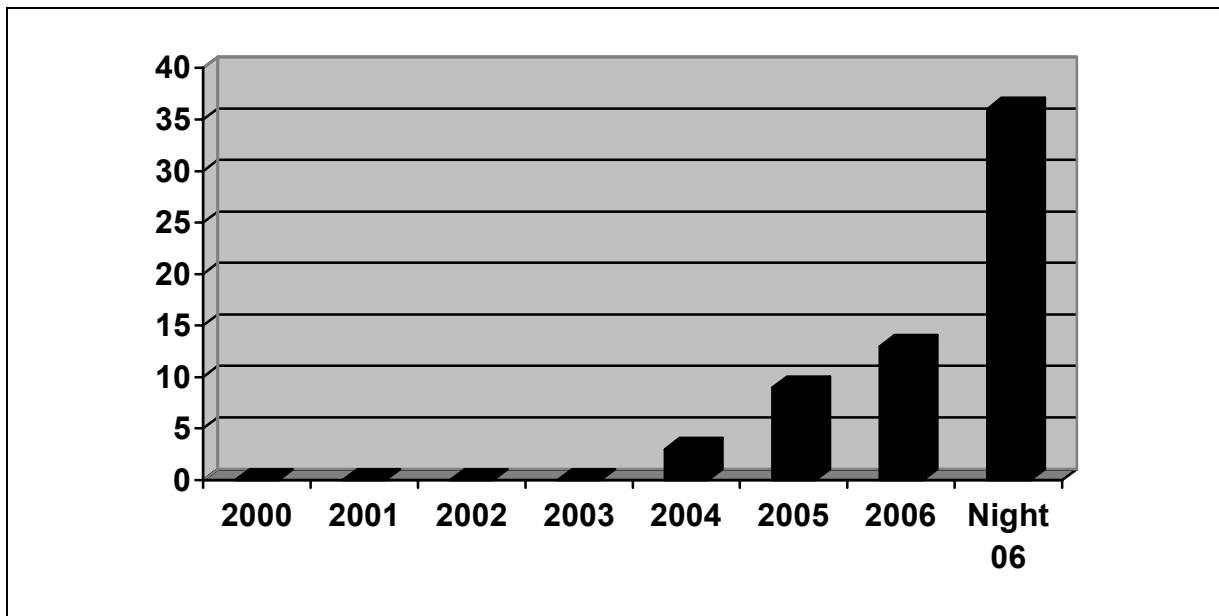


Figure 4. Number of preferred size rock bass collected per hour of electrofishing in Laurel Bed Lake 2000-2006. Preferred size for rock bass is nine inches.

In conclusion, the Laurel Bed Lake fishery has changed considerably since the late 1990's. The lake now offers seasonal fishing (April, May and June) for brook trout, and extended fishing opportunities for rainbow trout. Smallmouth bass established through stocking have added a new dimension to the fishery. Laurel Bed has both good numbers and good sizes of smallmouths. Rock bass are not as abundant as they were in the past, and the size structure is much improved.

Because the smallmouth population was established to control rock bass, smallmouth are protected by catch-and-release regulations. No smallmouth bass can be kept by anglers at Laurel Bed Lake. Statewide fishing regulations apply for brook trout at Laurel Bed Lake. Anglers can keep six trout that are larger than the seven-inch minimum size. There are no size or creel restrictions for rock bass in Laurel Bed Lake. Anglers may keep any rock bass they catch.

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